

AMENDMENTS TO THE CLAIMS

1. – 29. (Canceled)

30. (Previously Presented) A computer-readable medium, comprising software encoded thereon to detect passback events, which software when executed by a computer system, causes the computer system to perform operations comprising a method of:

defining a passback direction for a video monitored area;

accessing video collected from the video monitored area;

comparing a track determined from the collected video to the passback direction to detect whether any passback event occurred, comprising:

representing said track as a track vector;

representing said passback direction as a passback direction vector;

determining a dot product of said track vector and said passback direction vector;

comparing said dot product to a threshold to determine whether said track vector is substantially aligned with said passback direction; and

when said track vector is substantially aligned with said passback direction, filtering said track vector by at least one of spatial filtering or temporal filtering to determine whether a sufficient number of track vectors are substantially aligned with said passback direction;

detecting passback events based on the determination; and

initiating an action based on the detected passback events.

31. – 41. (Canceled)

42. (Previously Presented) A method to detect passback events, comprising:

defining a passback direction for a video monitored area;

accessing video collected from the video monitored area;

comparing a track determined from the collected video to the passback direction to detect whether any passback event occurred, comprising:

- representing the track as a track vector,
- representing the passback direction as a passback direction vector,
- determining a dot product of the track vector and the passback direction vector,

- comparing the dot product to a threshold to determine whether the track vector is substantially aligned with the passback direction, and

- when the track vector is substantially aligned with the passback direction, filtering the track vector by at least one of spatial filtering or temporal filtering to determine whether a sufficient number of track vectors are substantially aligned with the passback direction;

- detecting passback events based on the determination; and
- initiating an action based on the detected passback events.

43. - 44. (Canceled)

45. (Previously Presented) A system to detect passback events, comprising:

a video camera to monitor a video monitored area and obtain video of the video monitored area;

an analysis system coupled to the video camera, the analysis system comprising a computer system and a computer-readable medium, the computer-readable medium comprising software to control the computer system according to a method, the method comprising:

- determining a track in the obtained video,
- representing the track as a track vector,
- representing a passback direction as a passback direction vector,
- determining a dot product of the track vector and the passback direction vector,

comparing the dot product to a threshold to determine whether the track vector is substantially aligned with the passback direction,
when the track vector is substantially aligned with the passback direction, filtering the track vector by at least one of spatial filtering or temporal filtering to determine whether a substantial number of track vectors are substantially aligned with the passback direction, and
detecting the passback events in the video monitored area based on the number of track vectors which are substantially aligned with the passback direction;
and
a user interface coupled to the analysis system.

46. - 47. (Canceled)

48. (Previously Presented) An apparatus to detect passback events adapted to perform operations comprising a method of:

defining a passback direction for a video monitored area;
accessing video collected from the video monitored area;
comparing a track determined from the collected video to the passback direction to detect whether any passback event occurred, comprising:

representing the track as a track vector,
representing the passback direction as a passback direction vector,
determining a dot product of the track vector and the passback direction vector,

comparing the dot product to a threshold to determine whether the track vector is substantially aligned with the passback direction, and

when the track vector is substantially aligned with the passback direction, filtering the track vector by at least one of spatial filtering or temporal filtering to determine whether a sufficient number of track vectors are substantially aligned with the passback direction;

detecting passback events based on the determination; and
initiating an action based on the detected passback events.

49. (Canceled)